

Robert L. Cargill, P.E.
Consulting Engineering Services
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Specialized Professional Competence

Metallurgical and materials engineering including the design and development of manufacturing processes and production equipment; welding engineering; pressure vessel and structural steel welding, including nondestructive examination (NDE); analysis of product design and fabrication issues; failure analysis with modern surface analysis techniques including electron microscopy, X-ray, chemical, and microstructural analysis; corrosion and stress-corrosion cracking of structural materials; manufacturing process controls, including non-contact metrology and material properties measurement techniques.

Projects include: materials selection and welding procedures for safety-related modifications to nuclear power plants, corrosion fatigue in deep-water offshore structures; design of specialized manufacturing processes and tooling for high-technology products; materials analysis for medical devices; failure analysis, forensic engineering, accident reconstruction, and expert witness services for attorneys; technical support and expert witness services for the U.S. Air Force and the U.S. Army regarding defense contracts litigation.

Background and Accreditations

- Licensed Professional Engineer, State of California No. MT1920
- B.S. Metallurgical Engineering, U.C. Berkeley, with graduate study in Metallurgy, Fracture Mechanics, and Electron Microscopy
- American Welding Society Certifications in Metallurgy, Welding, and Advanced Welding Technology
- Numerous MIL-Spec Welding and NDE Certifications, including MIL-T-5021c (aircraft welding)
- Awarded three United States Patents and one Australian patent with a U.S. Patent Pending
- Awarded a United States Patent (biomedical UV optic system); Patent Pending (micromachining)
- Member: ASM International, The Metallurgical Society, American Welding Society
- Member, Society of Forensic Engineers and Scientists

Experience

- 1984-pres. **Principal, Cargill Engineering, San Jose & Trinidad, California**
Consulting engineering services for technology companies and legal clients including laboratory failure analysis as well as the development of specialized manufacturing tooling and materials processing techniques; forensic engineering and expert witness work.
- 1982-1984 **Principal Consultant, Materials and Fabrication Group, Nuclear Engineers, Inc., San Jose, California**
Stress corrosion cracking in nuclear plants, lead engineer for the design and field supervision of welding repairs and safety upgrades for nuclear power plants; responsible for design review of nuclear plant modifications; project engineer of a multi-national research project for corrosion fatigue in offshore structures;
- 1980-1982 **Staff Engineer, Aptech Engineering, Palo Alto, California**
Primary responsibility for in-house electron microscopy and laboratory failure analysis; contract research for the Electric Power Research Institute (EPRI) and electric utility companies regarding nuclear, fossil, and solar power plants.
- 1971-1977 **Partner, McGrail Equipment Co., Inc., Parkesburg, Pennsylvania**
Functioned as the technical officer of the company which specialized in the production of reusable shipping containers and material handling equipment for high-value military hardware; designed fixtures, tooling, and production equipment.